This listing of the claims will replace all prior versions of claims in the application:

Listing of Claims:

13 (currently amended). Method of detecting a welding process voltage detected ~~(27), wherein the welding process voltage (27)~~ between a welding torch ~~(10)~~ and a workpiece ~~(16) is detected~~, ~~characterised in that~~ comprising the step of performing a calculation of the welding process voltage ~~(27) is performed~~ in real time, taking account of the interference variables, in particular an inductance ~~(28)~~ and a resistance ~~(29)~~ of a welding system, the calculation for determining inductance being performed at specific time intervals during a welding process without the welding process being affected. ~~in accordance with the formula~~

~~$U_{proc}(t) = U_M(t) - (dI(t) * L) - (I(t) * R)$~~

~~the definition of the formula being as follows:~~

~~$U_M(t)$ the instantaneous voltage measured at the welding jacks, in particular at the output terminals 31, 32, by a measuring device 28 via measuring lines 29, 30,~~

~~$dI(t)$ the instantaneous change in current,~~

~~I(t) the current measured instantaneously at the welding jacks;~~

~~R the resistance 29 determined by a static measuring process or preset to a known variable;~~

~~L the inductance 28 determined by a static measuring process or calculated during the welding process.~~

14 (currently amended). Method as claimed in claim 13, ~~characterised in that~~ wherein the calculated welding process voltage ~~(27)~~ is applied by ~~the~~ a control unit ~~(4)~~ to the welding process ~~control~~.

Claim 15 (canceled).

16 (currently amended). Method as claimed in claim ~~13~~ 14, ~~characterised in that~~ wherein the interference variables~~, in particular the resistance (29) and/or the inductance (28) of the welding circuit~~ are detected and/or calculated by the control unit ~~(4)~~ before the start of the actual welding process.

17 (currently amended). Method as claimed in claim 13, ~~characterised in that~~ wherein a voltage and a current at the outputs of the current source ~~(2), in particular at the output~~

~~terminals (33, 34) of the current source (2),~~ are measured by a measuring device ~~(30)~~.

18 (currently amended). Method as claimed in claim 13, ~~characterised in that~~ wherein, in order to provide a static calculation of the interference variable of the resistance ~~(29)~~ and the inductance ~~(28)~~ of the hose pack ~~(23)~~ and optionally other ohmic interference variables during a secondary short-circuit prior to the start of the welding process, a current change is imposed on a current curve and the measured voltage is evaluated.

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19 (currently amended). Method as claimed in claim ~~10~~ 14, ~~characterised in that~~ wherein, at a predetermined point in time of the current curve, a measurement is taken ~~(4)~~ or the values of the voltage and current detected at the output terminals ~~(33, 34)~~ of the current source ~~(2)~~ by the control unit are used to calculate the resistance ~~(29)~~.

20. Method as claimed in claim 18, ~~characterised in that in order to provide a static calculation of the interference variables, in particular the resistance (29) and the inductance (28) of the hose pack (23),~~ wherein the lines of the hose pack (23) are short-circuited or a short-circuit is produced between

the electrode of the welding torch ~~(10)~~ and the workpiece ~~(16)~~ with the supply lines ~~(7)~~ of the hose pack ~~(23)~~ connected thereto, taking account of other interference variables, in particular of the welding torch ~~(10)~~.

Claim 21 (canceled).

Claim 22 (canceled).

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23 (currently amended). Method as claimed in claim 13, ~~characterised in that~~ wherein a process control or a welding process control is performed during the entire pulse duration.

24. Method as claimed in claim ~~13~~ 14, ~~characterised in that~~ wherein the interference variables are calculated by the control unit ~~(2)~~ by means of software using the detected values and a predetermined calculation program.